

## LATENT MERCAPTANS AS STABILIZERS FOR HALOGEN-CONTAINING POLYMER COMPOSITIONS

5 This application is a continuation-in-part of application 09/008,542, filed January 16, 1998, <sup>Pat 10: 6743840</sup> which is a continuation-in-part of application 08/597,093, filed February 23, 1996, now abandoned, which was a continuation-in-part of application 08/435,413, now abandoned.

### FIELD OF THE INVENTION

10 This invention relates to stabilizer compositions comprising degradation products of a blocked mercaptan present during processing of the composition at an elevated temperature, said products including a free mercaptan. This invention also relates to polymer compositions containing a polymer normally susceptible to heat-induced deterioration and the degradation products of a blocked mercaptan present during processing of the composition at an elevated temperature, said products including a free mercaptan. It also relates to such  
15 polymer compositions further containing a metallic-based heat stabilizer. This invention also relates to articles of manufacture, e.g. pipe, film, and window profile, made from stabilized polymer compositions containing a polymer normally susceptible to heat-induced deterioration, the degradation products of a blocked mercaptan present during processing of the composition at an elevated temperature, and a metallic-based heat stabilizer. Another  
20 aspect of this invention is the development of a novel reaction scheme which affords latent mercaptans which need no purification to be highly active PVC heat stabilizers at low use levels.

This invention also relates to latent mercaptans which are substantially free of the offensive odor typical of mercaptans and which may be used as anti-oxidants, odorants, anti-  
25 microbial agents, chelating agents and photostabilizers; and as intermediates for the preparation of anti-oxidants and primary heat stabilizers. It also relates to such anti-oxidants and primary heat stabilizers.

### BACKGROUND OF THE INVENTION

30 It is well known that the physical properties of various organic polymers deteriorate and color changes take place during processing of the polymer and during exposure of formed polymer products to certain environments. The prime examples of polymers which are susceptible to degradation during processing are the halogen-containing polymers such as